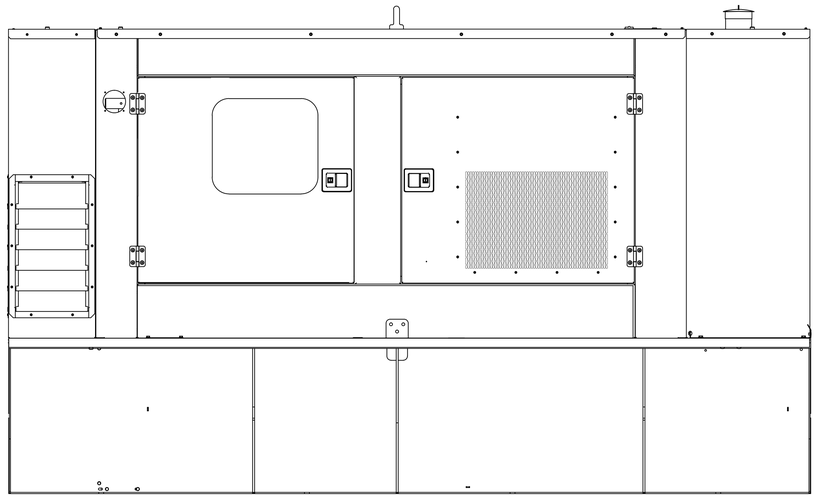
NASHUA POLICE STATION,
PANTHER DRIVE
NASHUA, NH 03061

500 KW / 625 KVA
GENERATOR



EMERGENCY/STANDBY GENERATOR AND POWER DISTRIBUTION SYSTEM

8-11-15

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PROJECT #214216

ELECTRICAL LEGEND

NOTE: THIS SYMBOL LIST IS A MASTER SCHEDULE. SOME OF THE SYMBOLS LISTED BELOW MAY NOT BE APPLICABLE TO THE SCOPE OF WORK FOR THIS PROJECT.

LIGHT OUTLET AND FIXTURE - LETTER REFERS TO FIXTURE SCHEDULE

- F, C, R OR P, W OR I — FLUORESCENT OR LINEAR INCANDESCENT FIXTURE; INCANDESCENT, FLUORESCENT, OR H.I.D. FIXTURE; WALL MOUNTED FIXTURE
- DIRECTIONALLY ORIENTATED FIXTURE
- OR — FIXTURE WIRED TO EMERGENCY CIRCUIT
- NL — FIXTURE WIRED TO NIGHT LIGHTING CIRCUIT
- EXIT SIGN - SINGLE FACE, DOUBLE FACE - DIRECTIONAL ARROWS AS INDICATED

WIRING DEVICES - SWITCHES 20A., 120/277V. M.H. 48" TO ℄ EXCEPT AS NOTED

- S — SINGLE POLE
- S2 — DOUBLE POLE
- S3 — THREE WAY
- S4 — FOUR WAY
- — SINGLE POLE SWITCH WITH THERMAL ELEMENT
- — DIMMER SWITCH - 600W-120V. (UNLESS NOTED OTHERWISE) LINEAR SLIDE BAR TYPE
- FL — DIMMER SWITCH - FLOURESCENT RATED - LINEAR SLIDE BAR TYPE
- SMC — MAINTAINED CONTACT-THREE POSITION-CENTER OFF-SINGLE POLE-DOUBLE THROW
- — SPEED SWITCH - FURNISHED BY HVAC CONTRACTOR - INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR
- SD — DOOR OPERATED SWITCH

OCCUPANCY SENSORS / AUTOMATIC CONTROL DEVICES

- S — WALL MOUNTED - PIR AND ULTRASONIC, 120/277V RATED, MANUAL OVERIDE, WHITE FINISH - 15 MINUTE SETTING - WATTSTOPPER #DW-100
- S_2 — DUAL CIRCUIT WALL MOUNTED - PIR AND ULTRASONIC, 120/277V RATED, MANUAL OVERIDE, WHITE FINISH - 15 MINUTE SETTING - WATTSTOPPER #DW-200
- S_{CLG} — FLUSH CEILING MOUNTED - PASSIVE INFRARED, 120/277V RATED, WHITE FINISH - WITH POWER PACK(S) - WATTSTOPPER #CI-300
- WP S H — WALL MOUNTED LOW TEMPERATURE PIR OCCUPANCY SENSOR WITH POWER PACK 120/277V - WATTSTOPPER #CBI00 - MOUNTED 6' BELOW CEILING
- ST — WALL MOUNTED - DIGITAL COUNT DOWN TIMER, 120/277V RATED, MANUAL OVERIDE (FIELD SET DIP SWITCHES AT 2 HOURS), WHITE FINISH - WATTSTOPPER #TS400W

WIRING DEVICES - RECEPTACLES 20A., 125V. GROUNDING TYPE. M.H. 18" TO ℄ A.F.F. (EXCEPT AS NOTED)

- DUPLEX - WALL MOUNTED
- DOUBLE DUPLEX
- GFI — DUPLEX - GROUND FAULT INTERRUPTER TYPE
- IG — DUPLEX - ISOLATED GROUND TYPE
- WP — DUPLEX - WEATHERPROOF
- R — RANGE OUTLET - 50A 125/250V GROUNDING TYPE
- TP — TAMPERPROOF TYPE RECEPTACLE
- KP — DUPLEX - KICKPLATE MOUNTING
- C OR — DUPLEX - MOUNTED 42" A.F.F. OR ABOVE COUNTER BACKSPLASH
- SPECIAL PURPOSE RECEPTACLE - REFER TO FLOOR PLANS FOR TYPE
- CLOCK OUTLET - SINGLE OR DUPLEX - 15A., 120V., MTD. 8'-0" A.F.F. TO ℄
- WIREMOLD G4000 DUAL CHANNEL SURFACE MOUNTED (42" A.F.F.) RACEWAY SYSTEM WITH DUPLEX 20A-125V OUTLETS 24" O.C. ALTERNATELY WIRED AND DATA/VOICE OUTLETS AS REQUIRED BY THE TENANT
- DUPLEX OUTLET WIRED TO NORMAL/EMERGENCY DISTRIBUTION SYSTEM

TELECOMMUNICATIONS

- D/V — DATA/VOICE CONNECTION TO PARTITION SYSTEM - REFER TO DETAIL ON DRAWING E-#
- VOICE/DATA OUTLET - WALL MOUNTED - REFER TO DETAIL ON DRAWING E-#
- TELEPHONE OUTLET - WALL MOUNTED - REFER TO DETAIL ON DRAWING E-#
- DATA OUTLET - WALL MOUNTED - REFER TO DETAIL ON DRAWING E-#

EXISTING ELECTRICAL EQUIPMENT

- ETR — EXISTING EQUIPMENT TO REMAIN
- DOTTED DENOTES EXISTING EQUIPMENT
- XR — EXISTING EQUIPMENT TO BE RELOCATED
- RX — NEW LOCATION OF RELOCATED EXISTING ELECTRICAL EQUIPMENT
- X — EXISTING EQUIPMENT TO BE REMOVED

MOTOR CONTROLS AND DISTRIBUTION EQUIPMENT

- NON-FUSIBLE DISCONNECT SWITCH - RATING AS INDICATED
- FUSIBLE DISCONNECT SWITCH - RATING AS INDICATED
- ENCLOSED CIRCUIT BREAKER - RATING AS INDICATED
- MAGNETIC MOTOR STARTER - NUMERAL INDICATES NEMA SIZE
- MOTOR - NUMERAL INDICATES HORSEPOWER
- CP — CONTROL PANEL
- TRANSFORMER - NUMERAL INDICATES KVA RATING
- LIGHTING AND/OR POWER PANELBOARD
- METER - CHECK METER EMON-DEMON WITH "PEAK DEMAND" READING - AMPERE AS INDICATED
- VFD — VARIABLE FREQUENCY DRIVE

CONDUIT AND WIRING (BRANCH AND FEEDER CIRCUITRY)

- CONDUIT AND WIRING - DIAGONAL LINES INDICATE # OF WIRES (GROUNDING WIRE NOT SHOWN) MINIMUM WIRE SIZE #12 AWG. MINIMUM CONDUIT SIZE 3/4" (TYPICAL U.N.O.)
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- HOMERUN TO PANELBOARD DESIGNATED - 2 #12 # #12G-3/4"C. TO 20A-1P CIRCUIT BREAKER (TYPICAL UNLESS NOTED OTHERWISE)
- FLEXIBLE CONDUIT AND EQUIPMENT CONNECTION

FIRE ALARM SYSTEM - ADDRESSABLE

- FACP — FIRE ALARM CONTROL PANEL
- F — MANUAL PULL STATION - M.H. 48" TO ℄ A.F.F.
- F — HORN/STROBE UNIT - M.H. 80" AFF OR 6" BELOW CEILING - CANDELA RATING AS INDICATED
- STROBE UNIT - M.H. 80" A.F.F. OR 6" BELOW CEILING - CANDELA RATINGS AS INDICATED
- KK — KEY KEEPER - LOCK BOX - 10 KEY CAPACITY
- HD — HEAT DETECTOR - COMBINATION TYPE - "DC" INDICATES DUAL CONTACTS
- HDF — HEAT DETECTOR - FIXED TEMPERATURE TYPE
- SD — SMOKE DETECTOR - "DC" INDICATES DUAL CONTACTS
- BTH — BEAM TYPE SMOKE DETECTOR - TRANSMITTER
- BTH — BEAM TYPE SMOKE DETECTOR - RECEIVER
- SAD — DUCT MOUNTED SMOKE DETECTOR - INSTALLED BY HVAC CONTR.,FURNISHED # WIRED BY ELECT. CONTR.
- RTS — REMOTE INDICATING AND TESTING STATION
- EB — STANDBY BATTERY UNIT
- WF — WATER FLOW SWITCH - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
- TS — TAMPER (SUPERVISORY) SWITCH - FURN. # INSTALLED BY SPRINKLER CONTR., WIRED BY ELEC. CONTR.
- PIV TS — TAMPER SWITCH - POST INDICATOR VALVE - FURNISHED # INSTALLED BY SPRINKLER CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR
- PS — PRESSURE SWITCH - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
- RAI — REMOTE ALARM INDICATOR
- RDD — REMOTE DIGITAL DISPLAY UNIT
- DH — MAGNETIC DOOR HOLDER
- RED EXTERIOR FLASHING BEACON
- RFA — FIRE ALARM MONITORING RELAY
- FIRE ALARM BELL - FURNISHED AND INSTALLED BY SPRINKLER CONTR., WIRED BY ELECTRICAL CONTR.
- MM — MONITOR MODULE
- CM — CONTROL MODULE
- VOM — VENTILATION OVERIDE MODULE
- MASTER BOX (SEE SPECIFICATIONS)

BUSWAY DISTRIBUTION SYSTEM

- XXXXXX — FEEDER TYPE BUSWAY-AMPERAGE AS INDICATED
- PLUG-IN TYPE BUSWAY-AMPERAGE AS INDICATED
- EC — END CABLE TAP BOX
- CB — PLUG-IN CIRCUIT BREAKER UNIT - REFER TO SCHEDULE

FLOOR BOXES AND POKE THRU DEVICES

- FB P — FLUSH MOUNTED POWER FLOOR BOX WITH CONDUIT TAKE-OFF FOR FURNITURE POWER. WALKER #880MP WITH 880MPA, 817P FLANGE AND 829CKI COVER PLATE
- FB T, D/V — FLUSH MOUNTED TELECOM FLOOR BOX WITH CONDUIT TAKE-OFF FOR VOICE/DATA CABLING. WALKER #880MP WITH 880MPA, 817P FLANGE AND 829CKI COVER PLATE
- FB D/V — DUAL GANG FLUSH MOUNTED CAST IRON FLOOR BOX WITH 120V-20A DUPLEX OUTLET AND BRASS COVER PLATE
- PT D/V — DUAL GANG FLUSH MOUNTED FIRE RATED POKE-THRU DEVICE WITH 20A-125V DUPLEX RECEPTACLE AND DATA/VOICE OUTLET AND BRASS COVER PLATE - REFER TO DETAIL ON DRAWING E-#
- PT D/V-TV — TRIPLE GANG FLUSH MOUNTED FIRE RATED POKE-THRU DEVICE WITH 20A-125V DUPLEX RECEPTACLE, DATA/VOICE OUTLET AND CATV OUTLET AND BRASS COVER PLATE - REFER TO DETAIL ON DRAWING E-#
- FB D/V-TV — TRIPLE GANG FLUSH MOUNTED FIRE RATED FLOOR BOX WITH 20A-125V DUPLEX RECEPTACLE, DATA/VOICE OUTLET AND CATV OUTLET AND BRASS COVER PLATE - REFER TO DETAIL ON DRAWING E-#
- PT P/D — COMBINATION POWER AND VOICE/DATA FIRE RATED MONUMENT TYPE POKE THRU DEVICE FOR FURNITURE SYSTEM CONNECTION - REFER TO DETAIL ON DRAWING E-#
- PT P — POWER ONLY FIRE RATED MONUMENT TYPE POKE THRU DEVICE FOR FURNITURE SYSTEM CONNECTION - REFER TO DETAIL ON DRAWING E-#
- PT D — VOICE/DATA ONLY FIRE RATED MONUMENT TYPE POKE THRU DEVICE FOR FURNITURE SYSTEM CONNECTION - REFER TO DETAIL ON DRAWING E-#
- PT — MONUMENT TYPE FIRE RATED POKE THRU - REFER TO DETAIL ON DRAWING E-#
- BF — BASE FEED MODULE CONNECTION TO PARTITION SYSTEM - REFER TO DETAIL ON DRAWING E-#

EMERGENCY LIGHTING SYSTEMS - 12 VOLT

- BATTERY UNIT - DUAL-LITE #LZ30W (TYPICAL UNLESS NOTED OTHERWISE)
- REMOTE HEAD-WALL MOUNTED - DUAL-LITE #LZR6VSW
- REMOTE HEADS-WALL MOUNTED - DUAL-LITE #LZTR6VSW
- EMERGENCY WIRING - 2#12-1/2" CONDUIT (TYPICAL UNLESS NOTED OTHERWISE)
- DL — DAMP LOCATION EMERGENCY REMOTE HEAD - DUAL-LITE #LZR6VSW
- WP — WEATHERPROOF EMERGENCY REMOTE HEAD - DUAL-LITE #N4X0607
- RECESSED REMOTE EMERGENCY LIGHT - DUAL-LITE #EXT-1225B-18W

MISCELLANEOUS

- INDEXING SYMBOL
- ELECTRIC RADIATION - FURNISHED AND INSTALLED BY HVAC CONTRACTOR, WIRED BY THE ELECTRICAL CONTRACTOR
- SP — PUBLIC ADDRESS FLUSH CEILING MOUNTED SPEAKER WITH VOLUME CONTROL
- CR — CARD READER - PROVIDED BY SECURITY SYSTEM VENDOR
- J or J — JUNCTION BOX
- TC — TIME CLOCK (SWITCH) 7 DAY ASTRONOMIC DIAL - 24 HOUR - DIGITAL CONTROL - BATTERY BACKUP
- LV T — LINE VOLTAGE THERMOSTAT
- DR — ELECTRIC DOOR RELEASE
- PP — POWER POLE - DUAL CHANNEL
- TV — COAXIAL OUTLET FOR C.A.T.V.
- SD L — SINGLE OR MULTISTATION LOCAL 120V PHOTOELECTRIC TYPE SMOKE DETECTOR WITH INTERNAL AUDIBLE DEVICE AND BATTERY BACKUP
- CO L — SINGLE OR MULTISTATION LOCAL 120V CARBON MONOXIDE DETECTOR WITH INTERNAL AUDIBLE DEVICE AND BATTERY BACKUP
- DS — FLUSH CEILING MOUNTED DAYLIGHT SENSOR - HUBBELL #DLC-PC-O

CABLE TRAY SYSTEMS

- 9 — 9" WIDE, 4" HIGH ALUMINUM LADDER TYPE CABLE TRAY STRAIGHT SECTION, 6" RUNG SPACING
- 18 — 18" WIDE, 4" HIGH ALUMINUM LADDER TYPE CABLE TRAY STRAIGHT SECTION, 6" RUNG SPACING
- 24 — 24" WIDE, 4" HIGH ALUMINUM LADDER TYPE CABLE TRAY STRAIGHT SECTION, 6" RUNG SPACING
- 90° HORIZONTAL BEND
- CABLE TRAY TEE-SIZE AS REQUIRED

GENERAL NOTES

1. ELECTRICAL CONDUIT SHALL BE RUN CONCEALED WHEREVER POSSIBLE. RUN EXPOSED CONDUIT PERPENDICULAR OR PARALLEL TO BUILDING WALLS OR COLUMNS.
2. WIRE AND CONDUIT SIZES INDICATED ON HOMERUNS SHALL RUN CONTINUOUS THROUGHOUT CIRCUIT.
3. A PROPERLY SIZED EQUIPMENT GROUNDING CONDUCTOR SHALL BE RUN WITH ALL CIRCUITS INCLUDING IN EMT, IMC AND RIGID STEEL RACEWAYS.
4. CONDUITS AND CIRCUITRY INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC ONLY. FINAL LOCATION OF CONDUIT SHALL BE FIELD COORDINATED SO AS TO AVOID CONFLICTS WITH OTHER TRADES.
5. ALL 120V BRANCH CIRCUITS WHEN 100 LINEAR FEET OR MORE FROM LAST OUTLET OR FIXTURE IN CIRCUIT TO RESPECTIVE PANELBOARDS SHALL BE A MINIMUM OF #10 AWG COPPER WIRE(S).
6. ALL 208V OR 277V BRANCH CIRCUITS WHEN 200 LINEAR FEET OR MORE FROM LAST OUTLET OR FIXTURE IN CIRCUIT TO RESPECTIVE PANELBOARDS SHALL BE A MINIMUM OF #10 AWG COPPER WIRE(S).
7. COORDINATE EXACT LOCATION OF ALL EQUIPMENT WITH THE OWNER.
8. RACEWAYS RUN THROUGH AREAS OF WIDELY DIFFERENT TEMPERATURES SHALL BE SEALED WITH A PLIABLE COMPOUND AT THE VARIANT TEMPERATURE AREA.
9. ALL RACEWAY PENETRATIONS THROUGH FIRE RATED WALL, CEILING, OR FLOOR ASSEMBLIES SHALL BE PROPERLY FIRE SEALED.
10. PROVIDE SEISMIC RESTRAINTS FOR ALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH CURRENT ADDITION OF THE INTERNATIONAL BUILDING CODE.
11. OUTLETS OR DEVICES MOUNTED ON EXISTING CMU OR CONCRETE WALLS SHALL BE SURFACE MOUNTED IN APPROPRIATE BOXES.
12. ELECTRICAL RACEWAYS WHICH TRAVERSE THROUGH EXTERIOR CMU WALLS SHALL BE PROPERLY WEATHERSEALED.

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Revisions:	Date:
1	-
2	-

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Date:	8-11-15
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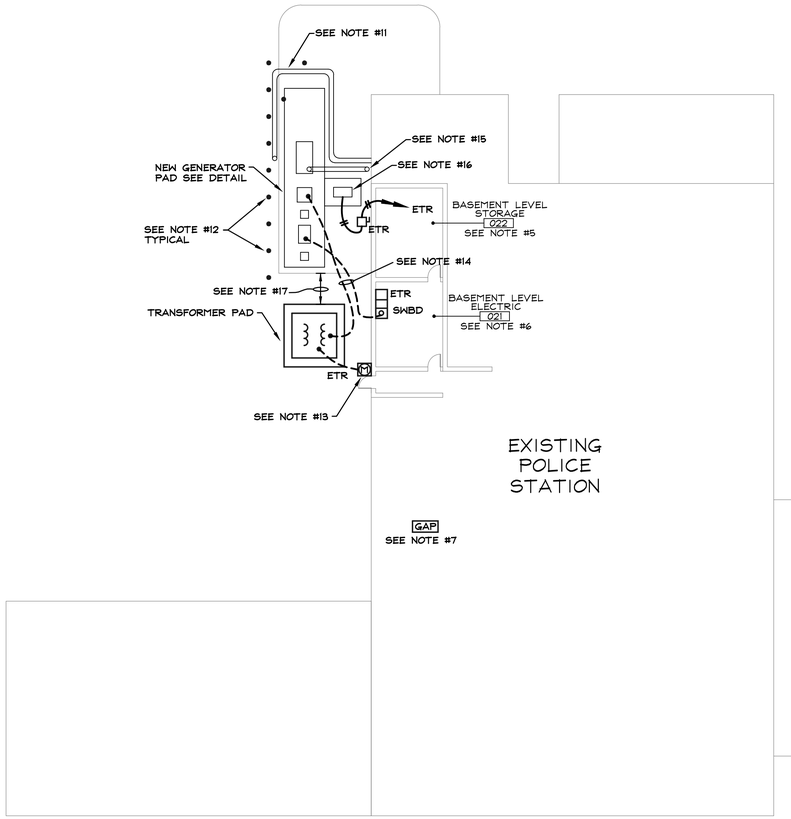
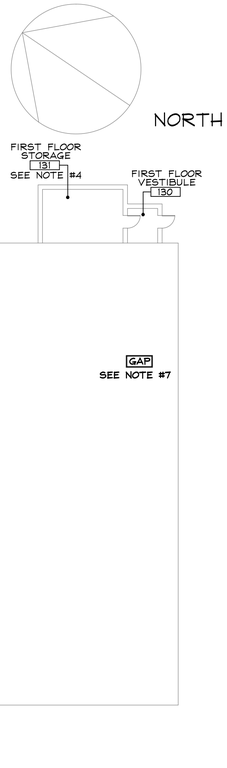
Project Name:
NASHUA POLICE STATION
PANTHER DRIVE
NASHUA, NH 03061
EMERGENCY/STANDBY
GENERATOR AND POWER
DISTRIBUTION SYSTEM

Sheet Name:
LEGEND, SPECIFICATIONS AND NOTES

214216-E-1.dwg

Sheet #:
E-1





NOTES:

1. PROVIDE ALL EXCAVATION AND BACKFILL AS REQUIRED.
2. SAW CUT PAVEMENT, REMOVE AND PROPERLY DISPOSE OF ALL MATERIALS NOT BEING REUSED.
3. PATCH PAVEMENT TO MATCH EXISTING MATERIAL AND THICKNESS. IN NO CASE SHALL THE PATCH PAVEMENT MATERIAL BE LESS THAN 3 INCHES.
4. THE EXISTING FIRST FLOOR EMERGENCY GENERATOR ROOM 131 SHALL BECOME STORAGE ROOM 131.
5. THE EXISTING BASEMENT LEVEL GENERATOR ROOM 022 SHAL BECOME STORAGE ROOM 022.
6. BASEMENT LEVEL ELECTRIC ROOM 021 SHALL NOT BE USED FOR ANY TYPE OF STORAGE. PROVIDE A SIGN ON THE ENTRANCE DOOR TO THE ELECTRIC ROOM.
7. PROVIDE GENERATOR ALARM PANELS, ONE IN THE CRITICAL OPERATION CENTER 129. AND ONE IN THE COMMUNICATIONS ROOM 162.
8. PROVIDE TEMPORARY GENERATORS AS REQUIRED FOR UTILITY OUTAGES AND/OR REMOVING EXISTING GENERATOR(S) FROM SERVICE. THE EXISTING NON-ESSENTIAL LOADS SHALL BE PROVIDED WITH AT LEAST ONE SOURCE OF POWER THROUGHOUT THE CONSTRUCTION PERIOD. THE EXISTING EMERGENCY AND STANDBY LOADS SHALL BE PROVIDED WITH AT LEAST TWO SOURCES OF POWER THROUGHOUT THE CONSTRUCTION PERIOD.
9. PROVIDE A LINE ITEM IN THE CONSTRUCTION BID PROPOSAL FOR THE SALVAGE VALUE OF THE EXISTING 250 KW/312.5 KVA CATERPILLAR GENERATOR. THE 275 KW CONSOLIDATED POWER GENERATOR SHALL BE PROPERLY DISPOSED OF.
10. OPENINGS LEFT BY THE REMOVED LOUVERS SHALL BE IN-FILLED WITH BLOCK OR CONCRETE TO MATCH EXISTING MATERIALS AND SURFACE FINISH. ALL PAINTING WILL BE PROVIDED BY THE OWNER.
11. PROVIDE CONCRETE RETAINING WALL AS REQUIRED TO HOLD BACK THE EARTH TO ALLOW A LEVEL AREA FOR THE GENERATOR PAD. RETAINING WALL SHALL BE PROVIDED WITH A 24" WIDE BY 12" DEEP FOOTING 48" BELOW GRADE. FOOTING SHALL BE PROVIDED WITH #5 REINFORCING BARS 12" ON CENTER TURNED UP AND ATTACHED TO THE BARS IN THE RETAINING WALL. RETAINING WALL SHALL BE 12" THICK AND RISE TO 4" ABOVE GRADE WITH #5 REINFORCING BARS 12" ON CENTER.
12. PROVIDE 5" GALVANIZED PIPE BOLLARD FROM 4 FEET BELOW GRADE TO 5 FEET ABOVE GRADE FILLED WITH CONCRETE.
13. PROVIDE A NEW UTILITY METER BASE WITH 1-1/2" GRC TO TRANSFORMER PAD. EVERSOURCE WILL PROVIDE CT'S IN THE TRANSFORMER WIRING COMPARTMENT INCLUDING WIRING, CONNECTIONS, AND METER. COORDINATE METER BASE LOCATION AND THIS WORK WITH EVERSOURCE.
14. INTERRUPT THE EXISTING SECONDARY ELECTRIC CONDUITS AND EXTEND TO THE NEW GENERATOR PAD. THE CONDUITS FROM THE TRANSFORMER PAD SHALL EXTEND TO THE 2000A ATS AND THE CONDUITS FROM THE SWBD SHALL EXTEND TO THE 2000A ENCLOSED CIRCUIT BREAKER.
15. PROVIDE NEW EXHAUST PIPING AS REQUIRED, UP THE SIDE OF THE BUILDING TO ABOVE THE ROOF AND TURN OUT, SIMILAR TO THE EXISTING.
16. THE EXISTING AIR CONDITIONING CONDENSER UNIT SHALL BE MAINTAINED AND RELOCATED ONTO THE NEW GENERATOR CONCRETE PAD.
17. MAINTAIN A MINIMUM SEPARATION OF 5 FEET FROM THE TRANSFORMER PAD TO THE GENERATOR PAD IN ACCORDANCE WITH THE CURRENT EVERSOURCE REQUIREMENTS.

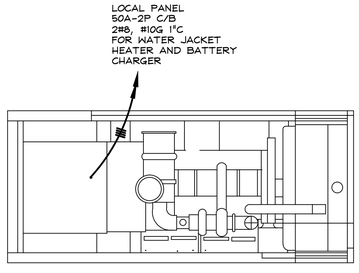
DIG SAFE - 1-888-DIG-SAFE

THE CONTRACTOR IS RESPONSIBLE TO CONTACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF ANY EXCAVATION.

LOCATIONS OF TRANSFORMER PADS, SWITCHGEAR PADS, LIGHTING POLE BASES, ETC. ARE INDICATED ON THIS SITE ELECTRICAL PLAN FOR INFORMATION PURPOSES ONLY. THE SITE GENERAL CONTRACTOR SHALL SEEK AND OBTAIN PERMISSION TO INSTALL ANY AND ALL EQUIPMENT PADS, POLE BASES AND/OR CONDUIT DUCTBANKS FROM ALL INTERESTED PARTIES, INCLUDING THE CIVIL ENGINEER, THE PROJECT DEVELOPER, THE UTILITY COMPANIES, ETC. PRIOR TO LOCATING AND PERMANANTLY INSTALLING SITE APPURTENANCES.

SITE PLAN
NOT TO SCALE

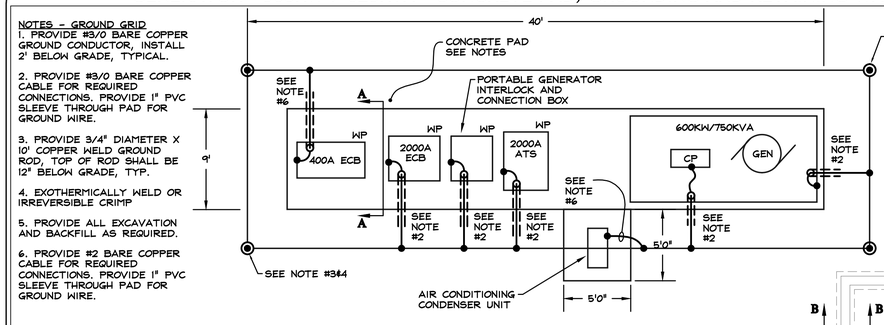
ENCLOSED GENERATOR - TOP VIEW



GENERATOR - 500KW / 625KVA - CONCRETE PAD, GROUNDING AND RETAINING WALL DETAIL

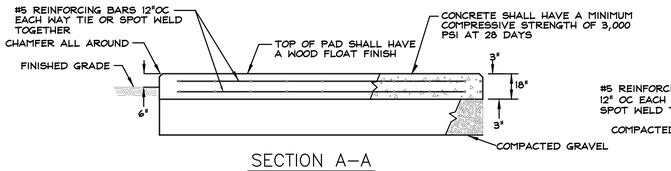
NOTES - GROUND GRID

1. PROVIDE #3/0 BARE COPPER GROUND CONDUCTOR, INSTALL 2' BELOW GRADE, TYPICAL.
2. PROVIDE #3/0 BARE COPPER CABLE FOR REQUIRED CONNECTIONS. PROVIDE 1" PVC SLEEVE THROUGH PAD FOR GROUND WIRE.
3. PROVIDE 3/4" DIAMETER X 10' COPPER WELD GROUND ROD, TOP OF ROD SHALL BE 12" BELOW GRADE, TYP.
4. EXOTHERMICALLY WELD OR IRREVERSIBLE CRIMP
5. PROVIDE ALL EXCAVATION AND BACKFILL AS REQUIRED.
6. PROVIDE #2 BARE COPPER CABLE FOR REQUIRED CONNECTIONS. PROVIDE 1" PVC SLEEVE THROUGH PAD FOR GROUND WIRE.

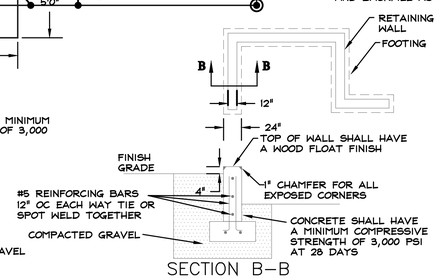


NOTES - CONCRETE PAD

1. CONCRETE SHALL BE 3000 PSI AT 28 DAYS, MINIMUM.
2. ALL REINFORCING STEEL SHALL BE GRADE 60. ALL REINFORCING STEEL SHALL BE TIED AS ONE UNIT
3. TOP OF PAD SHALL HAVE A WOOD FLOAT FINISH.
4. THE PAD SHALL EXTEND AT LEAST 12" BEYOND EQUIPMENT ON ALL SIDES.
5. THE CONCRETE PAD SHALL CURE AT LEAST 7 DAYS PRIOR TO PLACING GENERATOR.
6. PROVIDE ALL EXCAVATION AND BACKFILL AS REQUIRED.

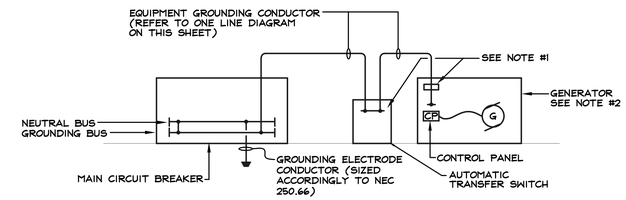


SECTION A-A



SECTION B-B

EMERGENCY/STANDBY GENERATOR GROUNDING DETAIL



NOTES:

1. CONNECT EQUIPMENT GROUNDING CONDUCTOR TO GROUNDING BAR, ENCLOSURES AND GENERATOR FRAME.
2. THE EMERGENCY/STANDBY GENERATOR IS NOT A SEPERATELY DERIVED SYSTEM AND SHALL BE GROUNDED ACCORDINGLY. ANY FACTORY INSTALLED JUMPER FROM THE NEUTRAL TERMINALS TO THE GENERATOR FRAME/GROUND SHALL BE REMOVED.

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Revisions:	Date:
1.	1.
2.	2.

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Scale:	N.T.S.
Project #:	214216

Project Name: NASHUA POLICE STATION
PANTHER DRIVE
NASHUA, NH 03061
EMERGENCY/STANDBY GENERATOR AND POWER DISTRIBUTION SYSTEM

Sheet Name: ELECTRICAL SITE PLAN, DETAILS AND NOTES

214216-E-2.dwg

Sheet #: E-2

ONE LINE POWER RISER NOTES

1. ALL EXISTING DISTRIBUTION EQUIPMENT AND FEEDERS SHALL REMAIN UNLESS SPECIFICALLY NOTED OTHERWISE.

2. CONDUCTOR SIZES ARE BASED ON COPPER AMPACITIES WITH XHHW INSULATION AND 75° C. TERMINAL RATINGS.

3. NEW DIESEL FIRED 500 KW/625 KVA, 277/480 VOLT, 3 PHASE, 4 WIRE, 60 HZ OUTPUT STANDBY GENERATOR IN WEATHER PROOF SOUND ENCLOSURE, WITH 48 HOUR BASE MOUNTED FUEL TANK, 800 AMP 3 POLE CIRCUIT BREAKER AND 400 AMP 3 POLE CIRCUIT BREAKER.

4. PROVIDE A SIGN AT THE MAIN CIRCUIT BREAKER IN THE ELECTRIC ROOM THAT INDICATES THE TYPE AND LOCATION OF ON-SITE OPTIONAL STANDBY POWER SOURCE.

5. EXISTING AUTOMATIC TRANSFER SWITCH (ATS) SHALL BE REMOVED, INCLUDING 2 KVA TRANSFORMER AND PANEL GP.

6. PROVIDE #3/0 GROUND GRID AROUND THE GENERATOR CONCRETE PAD. PROVIDE #3/0 JUMPER TO CONNECT GENERATOR FRAME IN TWO LOCATIONS. SEE GROUND GRID DETAIL FOR ADDITIONAL GROUNDING/BONDING REQUIREMENTS.

7. THE GENERATOR ALARM PANELS (GAP) SHALL BE FIELD LOCATED. ONE SHALL BE LOCATED IN THE CRITICAL OPERATION CENTER ROOM 129 AND ONE SHALL BE LOCATED IN THE COMMUNICATIONS ROOM 162. COORDINATE FINAL LOCATIONS WITH THE OWNER.

8. EXISTING ATS SHALL BE MAINTAINED INCLUDING UTILITY FEED AND ALL DOWN STREAM DISTRIBUTION.

9. REMOVE EXISTING SECONDARY ELECTRICAL SERVICE CONDUCTORS FROM THE UTILITY TRANSFORMER PAD TO THE MAIN SWITCHBOARD (SWBD).

10. THE EXISTING UTILITY METER SHALL BE DISCONNECTED AND REMOVED. THE CT'S WITHIN THE SWBD SHALL BE REMOVED AND REPLACED WITH SOLID BUSSING RATED FOR 2000 AMPS. THIS WORK SHALL BE COORDINATED WITH EVERSOURCE.

11. DISCONNECT AND REMOVE UTILITY FEED FROM THE SWBD TO THE ATS AND THE GENERATOR FEED FROM THE ATS TO THE SWBD.

12. REMOVE AND PROPERLY DISPOSE OF THE EXISTING CONSOLIDATED POWER 275 KW/343.75 KVA GENERATOR SET.

13. REMOVE THE EXISTING CATERPILLAR 250 KW/312.5 KVA GENERATOR SET. PROVIDE A LINE ITEM IN THE BID PROPOSAL FOR THE SALVAGE VALUE OF THIS GENERATOR.

14. PROVIDE A NEW 2000 AMP ATS, 4 POLE, 277/480 VOLT, WITH WINTER PACKAGE IN A NEMA 3R FREE STANDING ENCLOSURE. ATS SHALL BE SERVICE ENTRANCE RATED WITH 2000 AMP OVERCURRENT PROTECTION.

15. PROVIDE A 2000 AMP PORTABLE GENERATOR INTERLOCK AND CONNECTION BOX.

16. PROVIDE A 2000 AMP CIRCUIT BREAKER, 277/480 VOLT, 3 PHASE, 4 WIRE, WITH SOLID NEUTRAL AND GROUND BUS, GFI PROTECTION IN A NEMA 3R FREE STANDING ENCLOSURE. SERVICE ENTRANCE RATED.

17. PROVIDE A 400 AMP CIRCUIT BREAKER, 277/480 VOLT, 3 PHASE, 4 WIRE, WITH SOLID NEUTRAL AND GROUND BUS IN A NEMA 3R ENCLOSURE. SERVICE ENTRANCE RATED.

18. PROVIDE A NEW METER BASE WITH 1-1/2" CONDUIT TO TRANSFORMER PAD. EVERSOURCE SHALL PROVIDE CT'S, WIRING, CONNECTIONS, AND METER. COORDINATE THE WORK AND METER BASE LOCATION WITH EVERSOURCE.

19. INTERRUPT THE EXISTING SECONDARY ELECTRIC CONDUITS AND ROUTE THE CONDUITS FROM THE TRANSFORMER PAD TO THE 2000 AMP ATS AND ROUTE THE CONDUITS FROM THE SWBD TO THE 2000 AMP ENCLOSED CIRCUIT BREAKER AT THE GENERATOR PAD.

20. PROVIDE #1500 KCMIL FROM THE 400 AMP-3 POLE CIRCUIT BREAKER IN THE NORMAL POWER DISTRIBUTION SECTION OF THE SWBD TO THE MAIN LUGS IN THE STANDBY POWER DISTRIBUTION SECTION OF THE SWBD.

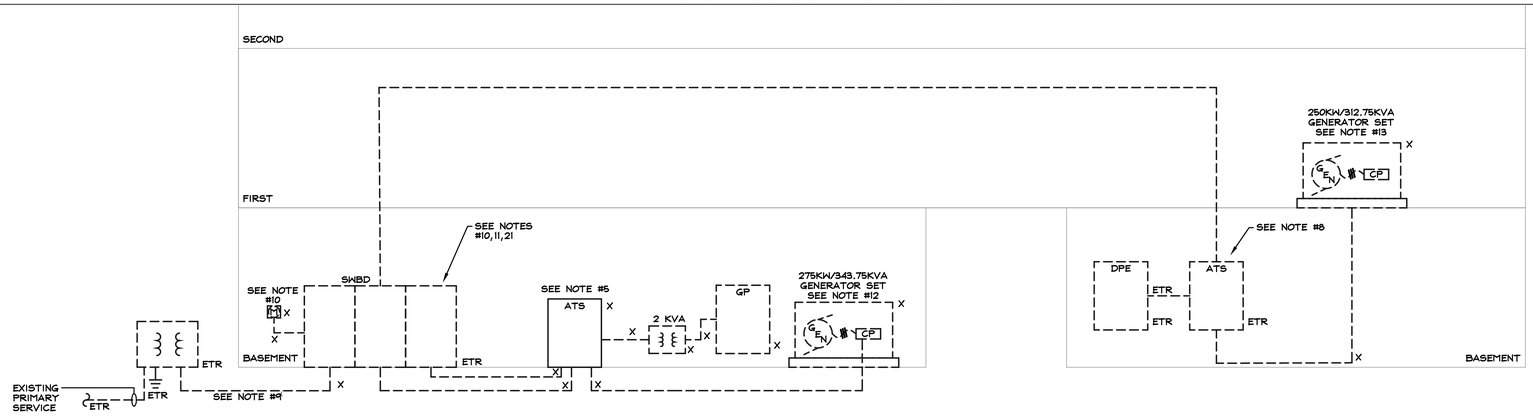
21. THE EXISTING 2000 AMP SWBD SHALL BE FULLY TESTED AND INSPECTED AS FOLLOWS:
- ALL CIRCUIT BREAKERS SHALL BE BENCH TESTED BY A CERTIFIED TESTING COMPANY.
- ALL CABLE AND BUS CONNECTIONS SHALL BE INSPECTED AND TORQUED.
- ALL SURFACES INSIDE AND OUTSIDE SHALL BE CLEANED AND INSPECTED FOR ANY CRACKED OR DAMAGED INSULATORS.
- PERFORM MEGGA TESTING ON ALL BUS BARS, INCOMING CABLES, OUT GOING CABLES, AND GROUNDING ELECTRODE.
- PERFORM AN INFRARED SCAN ON ALL BUS CONNECTIONS, WIRE TERMINATIONS, AND CIRCUIT BREAKERS.
- PROVIDE A WRITTEN REPORT TO THE OWNER ON ALL FINDINGS AND TESTING.

22. PROVIDE SHORT CIRCUIT AND COORDINATION STUDIES ALONG WITH ARC FLASH HAZARD ANALYSIS FOR NORMAL, STANDBY, AND EMERGENCY DISTRIBUTION SYSTEMS. PROVIDE ARC FLASH HAZARD WARNING LABELS ON ALL DISTRIBUTION EQUIPMENT INCLUDING PANELBOARDS MODIFIED IN ANY WAY AS PART OF THIS WORK.

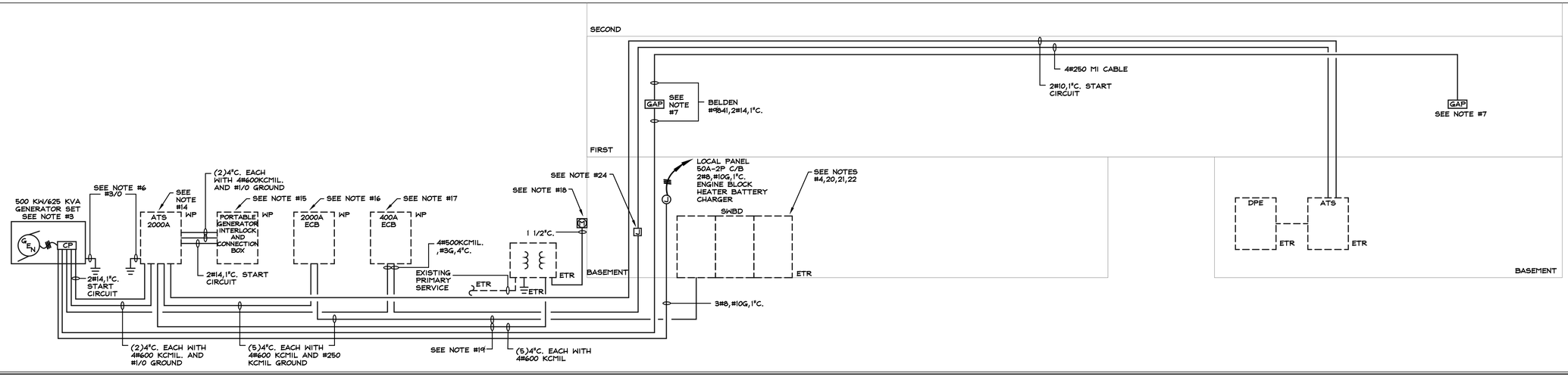
23. THE ELECTRICAL CONTRACTOR, GENERATOR DISTRIBUTOR, GENERATOR MANUFACTURER, AND THE ELECTRICAL ENGINEER SHALL ASSIST THE OWNER WITH STACK PERMITTING.

24. PROVIDE A CODE SIZED PULL/SPLICE BOX IN THE EXISTING MAIN ELECTRIC ROOM 021, WITH THE FOLLOWING LUGS. 3 POLE LUG SQUARE D #LBA364101 FOR THE PHASE CONDUCTORS. 1 POLE LUG SQUARE D #LBA162101 FOR GROUND CONDUCTOR.

EXISTING ONE LINE POWER RISER



NEW ONE LINE POWER RISER



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STATE OF NEW HAMPSHIRE
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LICENSED PROFESSIONAL ENGINEER

Revisions:	Date:
1. -	-

Drawn By:	RR
Checked By:	LL
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Project Name:
NASHUA POLICE STATION
PANTHER DRIVE
NASHUA, NH 03061
EMERGENCY/STANDBY
GENERATOR AND POWER
DISTRIBUTION SYSTEM

Sheet Name:
POWER RISERS AND NOTES
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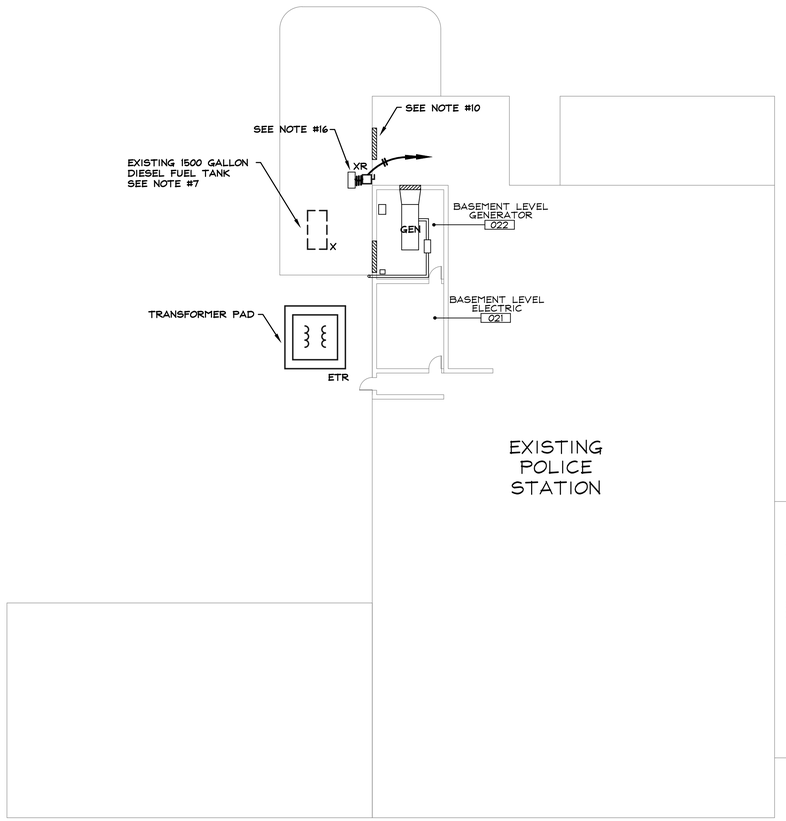
Sheet #:
E-3



NOTES:

1. PROVIDE ALL EXCAVATION AND BACKFILL AS REQUIRED.
2. SAW CUT PAVEMENT, REMOVE AND PROPERLY DISPOSE OF ALL MATERIALS NOT BEING REUSED.
3. PATCH PAVEMENT TO MATCH EXISTING MATERIAL AND THICKNESS. IN NO CASE SHALL THE PATCH PAVEMENT MATERIAL BE LESS THAN 3 INCHES.
4. THE EXISTING GENERATOR SETS SHALL BE REMOVED, INCLUDING ALL ACCESSORY EQUIPMENT, CONNECTIONS AND WIRING.
5. REMOVE DAY TANK INCLUDING ALL CONNECTIONS, WIRING, FUEL PIPING, ETC.
6. REMOVE 500 GALLON FUEL TANK INCLUDING ALL CONNECTIONS, WIRING, FUEL PIPING, ETC.
7. REMOVE 1500 GALLON UNDERGROUND FUEL TANK AND MONITOR SYSTEM INCLUDING ALL CONNECTIONS, WIRING, FUEL PIPING, CONCRETE PAD, ETC. PROVIDE SOIL TESTING FOR ANY LEAKAGE OF DIESEL FUEL. ANY REMOVAL OF CONTAMINATED SOILS WILL NOT PART OF THIS PROJECT AND WILL BE THE RESPONSIBILITY OF AND COORDINATED WITH THE CITY OF NASHUA.
8. PROVIDE TEMPORARY GENERATORS AS REQUIRED FOR UTILITY OUTAGES AND/OR REMOVING EXISTING GENERATOR(S) FROM SERVICE. THE EXISTING NON-ESSENTIAL LOADS SHALL BE PROVIDED WITH AT LEAST ONE SOURCE OF POWER THROUGHOUT THE CONSTRUCTION PERIOD. THE EXISTING EMERGENCY AND STANDBY LOADS SHALL BE PROVIDED WITH AT LEAST TWO SOURCES OF POWER THROUGHOUT THE CONSTRUCTION PERIOD.
9. PROVIDE A LINE ITEM IN THE CONSTRUCTION BID PROPOSAL FOR THE SALVAGE VALUE OF THE EXISTING 250 KW/312.5 KVA CATERPILLAR GENERATOR. THE 275 KW CONSOLIDATED POWER GENERATOR SHALL BE PROPERLY DISPOSED OF
10. REMOVE THE INTAKE AIR LOUVER, EXHAUST AIR LOUVER AND ALL DUCT WORK. OPENINGS LEFT BY THE REMOVED LOUVERS SHALL BE IN-FILLED WITH BLOCK OR CONCRETE TO MATCH EXISTING MATERIAL AND SURFACE FINISH. ALL PAINTING WILL BE PROVIDED BY THE OWNER.
11. REMOVE ENGINE EXHAUST SYSTEM INCLUDING MUFFLER, PIPING, HANGERS, ETC COMPLETE, INCLUDING RISER TO ABOVE ROOF LINE.
12. REMOVE ENGINE EXHAUST SYSTEM INCLUDING MUFFLER, PIPING, HANGERS, ETC. THE EXHAUST PIPING PENETRATING THE ROOF SHALL BE CUT AND CAPPED ABOVE AND BELOW THE ROOF.
13. THE EXISTING UTILITY METER SHALL BE DISCONNECTED AND REMOVED. THE CT'S WITHIN THE SWITCHBOARD SHALL BE REMOVED AND REPLACED WITH SOLID BUSSING RATED FOR 2000 AMPS. THIS WORK SHALL BE COORDINATED WITH EVERSOURCE.
14. DISCONNECT AND REMOVE GENERATOR FEED TO THE ATS. CONDUIT AND WIRE SHALL BE REMOVED COMPLETE. CONDUITS CONCEALED BELOW FLOOR SLAB SHALL BE CUT OFF FLUSH WITH THE FLOOR AND PATCHED OVER WITH CONCRETE TO MATCH FLOOR FINISH.
15. REMOVE EXISTING ATS, FEEDERS, BATTERY CHARGER, TRANSFORMER, PANEL AND ALL RELATED EQUIPMENT AND WIRING.
16. THE EXISTING AIR CONDITIONING CONDENSER UNIT SHALL BE MAINTAINED AND RELOCATED ONTO THE NEW GENERATOR CONCRETE PAD.
17. THE EXISTING GENERATOR ALARM PANEL (GAP) SHALL BE DISCONNECTED AND REMOVED COMPLETELY INCLUDING ALL CONDUIT AND WIRE. WALL SHALL BE PATCHED TO MATCH THE EXISTING WALL SURFACE. ALL PAINTING SHALL BE PROVIDED BY THE OWNER.
18. THE EXISTING FUEL IN EACH TANK SHALL BE REMOVED FILTERED AND TREATED. THIS FUEL SHALL BE RE-USED IF IT IS COMPATIBLE WITH THE NEW GENERATOR SET EMISSIONS REQUIREMENTS. THE 1500 GALLON UNDERGROUND TANK HAS APPROXIMATELY 1200 GALLONS AND THE 500 GALLON TANK HAS APPROXIMATELY 300 GALLONS.

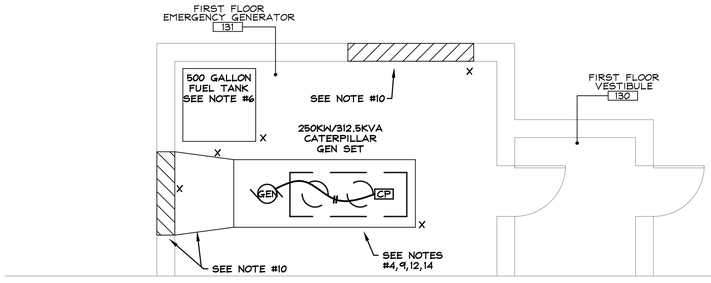
DIG SAFE - 1-888-DIG-SAFE

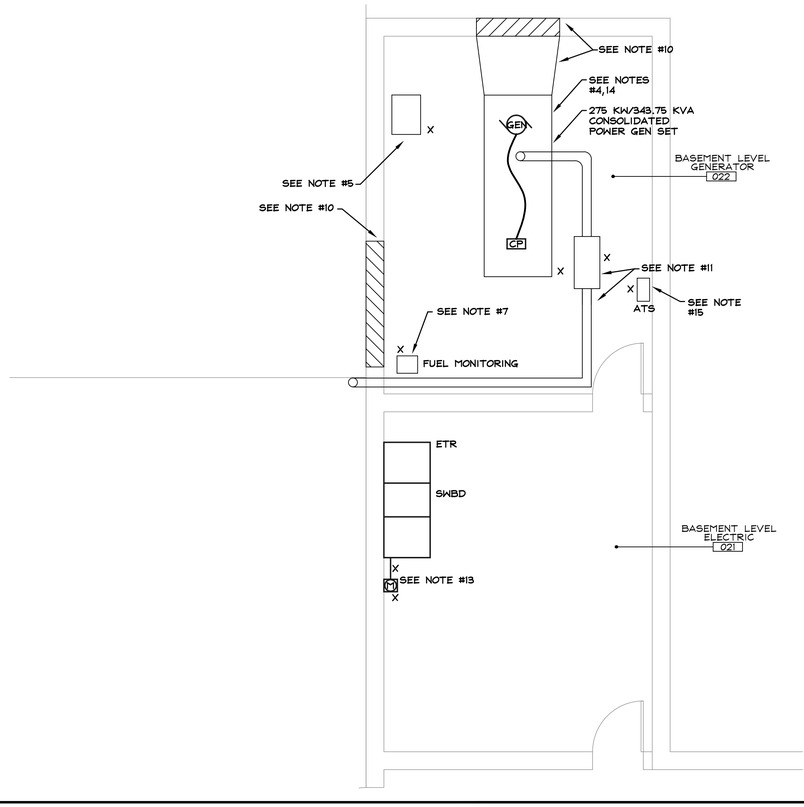
THE CONTRACTOR IS RESPONSIBLE TO CONTACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF ANY EXCAVATION.

LOCATIONS OF TRANSFORMER PADS, SWITCHGEAR PADS, LIGHTING POLE BASES, ETC. ARE INDICATED ON THIS SITE ELECTRICAL PLAN FOR INFORMATION PURPOSES ONLY. THE SITE GENERAL CONTRACTOR SHALL SEEK AND OBTAIN PERMISSION TO INSTALL ANY AND ALL EQUIPMENT PADS, POLE BASES AND/OR CONDUIT DUCTBANKS FROM ALL INTERESTED PARTIES, INCLUDING THE CIVIL ENGINEER, THE PROJECT DEVELOPER, THE UTILITY COMPANIES, ETC. PRIOR TO LOCATING AND PERMANANTLY INSTALLING SITE APPURTENANCES.

SITE DEMOLITION PLAN

NOT TO SCALE





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Sheet Name:
ELECTRICAL SITE DEMOLITION PLAN, DETAILS AND NOTES
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